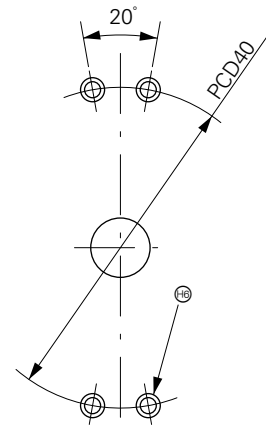
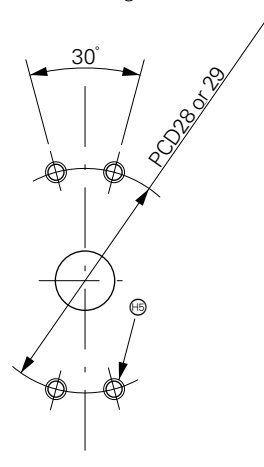
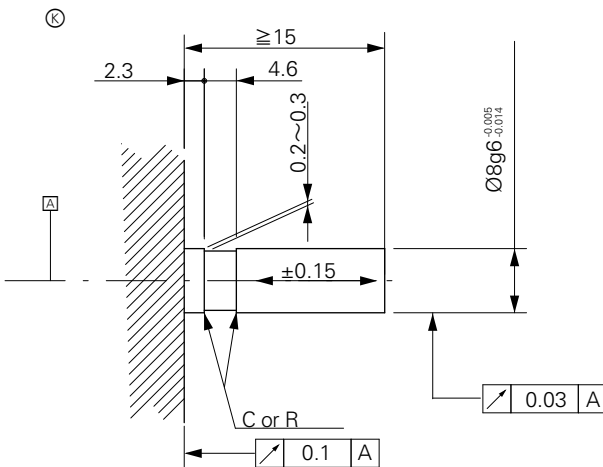
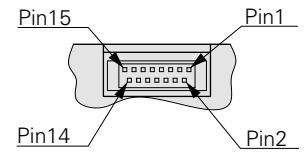
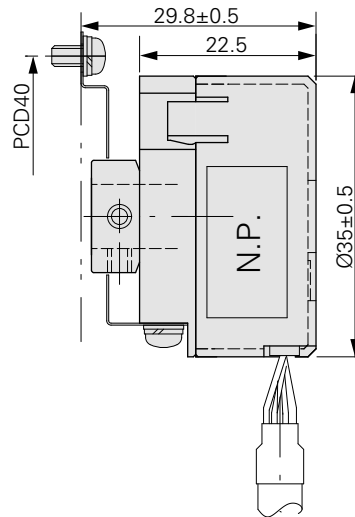
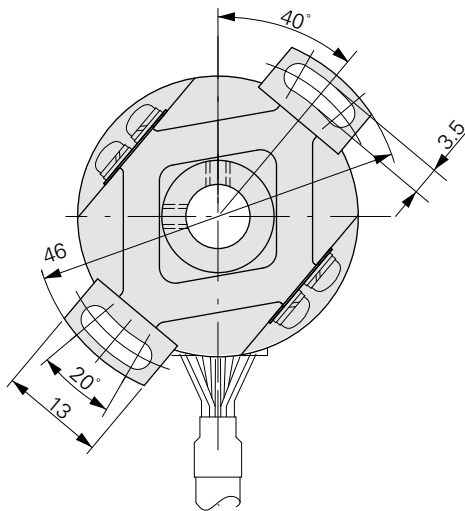
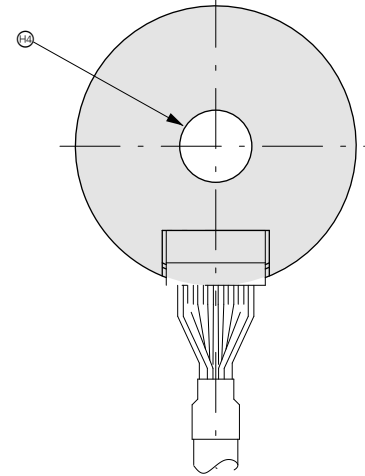
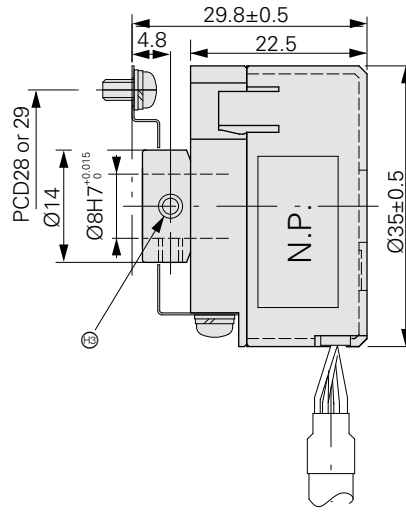
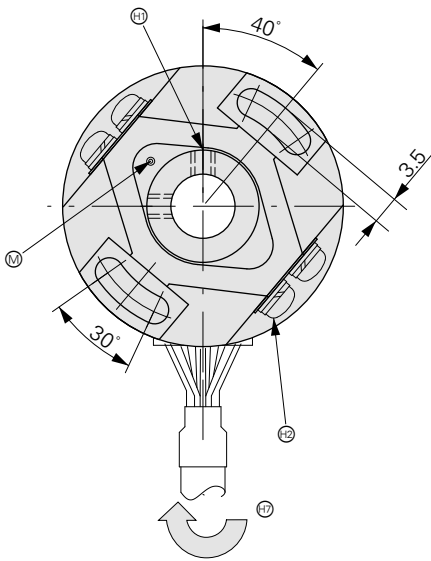


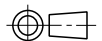
ERN 1100 Series

Incremental Rotary Encoder with Mounted Stator Coupling

- Outer Diameter 35 mm
- Length 29.8 mm
- Through Hollow Shaft Diameter 8.0 mm



Dimensions in mm

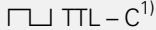
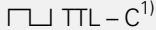



Tolerancing ISO 8015

- ⊙ = Required mating dimensions
- ⊙ = Measuring point for operating temperature
- ⊙ = Reference pulse output ±10°
- ⊙ = Screw 4-M2.5x6, SW,W
- ⊙ = Hexagon socket set screws 2-M3 SW1.5

- ⊙ = Hole Ø9
- ⊙ = Threaded mounting hole 4-M2.6
- ⊙ = Threaded mounting hole 4-M3
- ⊙ = Direction of shaft rotation for output signals as per the interface description

Coupling for PCD28 and 29 is not mounted on the encoder

	ERN 1120	ERN 1123	ERN 1130	ERN 1190	
Incremental signals	 TTL - C ¹⁾	 TTL - C ¹⁾	 HTLs ²⁾ - C ¹⁾	Open Collectors	
Output pulse* (Accuracy Class)	600^(I) 1000^(I) 1024^(I) 2000^(III) 2048^(III) 2500^(III) 4096^(III) 8192^(IV)				
Commutation signal *	–	2, 3, 4 P/R	–	–	
Scanning frequency Edge separation <i>a</i>	≤ 300 kHz ≥ 0.41 μs	≤ 300 kHz ≥ 0.41 μs	≤ 200 kHz ≥ 0.62 μs	≤ 200 kHz ≥ 0.62 μs	≤ 200 kHz ≥ 0.62 μs
System accuracy	Accuracy Class I : ±1/10 SP , Accuracy Class II : ±1/5 SP , Accuracy Class III: ±2/5 SP , Accuracy Class IV: ±4/5 SP				
Power supply Current consumption without load	5V ± 10% ≤ 70 mA	5V ± 10% ≤ 70 mA	10.8V to 26.4V ≤ 70 mA	5V ± 10% ≤ 70 mA	10.8V to 26.4V ≤ 70 mA
Output current	± 10 mA	± 10 mA	≤ 40 mA	≤ 40 mA	≤ 40 mA
Electrical connection	15-pin PCB connector				
Shaft	Thorough hollow shaft D = 8 mm				
Mech. permissible speed n	≤ 6000 min ⁻¹				
Starting torque (at 20°C)	≤ 0.005 Nm				
Moment of inertia of rotor	0.5 · 10 ⁻⁶ kgm ²				
Permissible axial motion of measured shaft	± 0.15 mm				
Vibration 25 to 2000 Hz Shock 6 ms	≤ 100 m/s ² (JIS C 60068-2-6, EN 60 068-2-6) ≤ 1000 m/s ² (JIS C 60068-2-27, EN 60 068-2-6)				
Max. operating temp. (Ambient Temperature)	90°C (85°C)				
Min. operating temp.	-20°C				
Protection EN 60 529	IP00				
Mass	Approx. 0.06 kg				

Bold : preferred versions


* Please select when ordering.

¹⁾ Bypass capacitor is connected to FG.

²⁾ Without inverse signal

Connecting Elements and Cables

Connecting Cables

Encoder cable inside the motor housing Cable diameter 5.5 mm			With one connector With PCB connector
	PCB connector	Cable Specification	
ERN 1123	15-pin	7x2x0.1mm ² (with Commutation signal)	721 655-01 (0.3m) 721 655-03 (1m)
ERN 1120 ERN 1130	15-pin	4x2x0.1mm ² (without Commutation signal)	721 654-01 (0.3m) 721 654-03 (1m)

Pin Layout



TTL-C

15-pin PCB Connector															
Power supply			Incremental signals							Other signals					
	13	14	15	1	2	3	4	5	6	7	8	9	10	11	12
	U_P	0V	FG	U_{a1}	\bar{U}_{a1}	U_{a2}	\bar{U}_{a2}	U_{a0}	\bar{U}_{a0}	U¹⁾	$\bar{U}^{1)$	V¹⁾	$\bar{V}^{1)$	W¹⁾	$\bar{W}^{1)$
	White	Black		Red	Pink	Olive	Blue	Yellow	Orange	Beige	Brown	Green	Gray	Light Blue	Violet

U_P = power supply

¹⁾Only **ERN1123**. **Cable shield** connected to housing

HTLs-C / Open Collectors

15-pin PCB Connector									
Power supply			Incremental signals						
	13	14	15	1	2	3	4	5	6
	U_P	0V	FG	U_{a1}	0V	U_{a2}	0V	U_{a0}	0V
	White	Black		Red	Pink	Olive	Blue	Yellow	Orange

Cable shield connected to housing; **U_P** = power supply

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